

U.S. ENVIRONMENTAL PROTECTION AGENCY

UNDERGROUND INJECTION CONTROL PERMIT:

CLASS I Permit Number AK-11003-I

In compliance with provisions of the Safe Drinking Water Act (SDWA), as amended, (42 U.S.C. 300f-300j-9), and attendant regulations incorporated by the U.S. Environmental Protection Agency (EPA) under Title 40 of the Code of Federal Regulations, ARCO Alaska, Inc., P.O. Box 100360, Anchorage, Alaska 99510 (permittee) is authorized to inject non-hazardous industrial waste through three Class I injection wells (Northwest Well, Southwest Well, and Southeast Well) located at NW 1/4, Sec. 11, T.10N, R.14E, Alaska, into the Sagavanirktok Formation, in accordance with conditions set forth herein. Injection of hazardous waste as defined under the Resource Conservation and Recovery Act (RCRA), as amended, (42 USC 6901) or radioactive substances are not authorized under this permit. Injection shall not commence until the operator has received written authorization from the EPA Director, Water Division, to inject.

All references to Title 40 of the Code of Federal Regulations are to all regulations that are in effect on the date that this permit is issued. Attachments are referenced to the UNDERGROUND INJECTION CONTROL PERMIT APPLICATION (EPA Form 7520-6).

This permit shall become effective on August 20, 1989, in accordance with 40 CFR 124.15.

This permit and the authorization to inject shall expire at midnight, August 20, 1999, unless terminated.

Signed this 20th day of July 1989.

/s/ Robert S. Burd
Robert S. Burd
Director, Water Division
U.S. Environmental Protection Agency
Region 10

This permit modification shall become effective January 24, 1995. Signed this 24th day of January, 1995.

/s/ Charles E. Findley
Charles E. Findley
Director, Water Division, Region 10
U.S. Environmental Protection Agency

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PART I
GENERAL PERMIT CONDITIONS

A. EFFECT OF PERMIT

The permittee is allowed to engage in underground injection in accordance with the conditions of this permit. The underground injection activity, otherwise authorized by this permit, shall not allow the movement of fluid containing any contaminant into underground sources of drinking water, if the presence of that contaminant may cause a violation of any primary drinking water regulation under 40 CFR Part 141 or may otherwise adversely affect the health of persons or the environment. Compliance with this permit during its term constitutes compliance for purposes of enforcement with Part C of the Safe Drinking Water Act (SDWA). Such compliance does not constitute a defense to any action brought under Section 1431 of the SDWA, or any other law governing protection of public health or the environment from imminent and substantial endangerment to human health or the environment.

This permit may be modified, revoked and reissued, or terminated during its term for cause. Issuance of this permit does not convey property rights or mineral rights of any sort or any exclusive privilege; nor does it authorize any injury to persons or property, any invasion of other private rights, or any infringement of State or local law or regulations. This permit does not authorize any above ground generating, handling, storage, or treatment facilities.

This permit is based on the permit application submitted on December 21, 1984, and supplemental material dated March 25, 1985, November 25, 1986, January 30, 1987, October 29, 1987, February 11, 1988, February 23, 1988, April 19, 1988, June 24, 1988, August 23, 1988, March 2, 1989, March 16, 1989, March 20, 1989, March 31, 1989, April 11, 1989, April 28, 1989 and June 9, 1989.

B. PERMIT ACTIONS

1. Modification, Reissuance or Termination

This permit may be modified, revoked and reissued, or terminated for cause as specified in 40 CFR 144.39 and 144.40. Also, the permit can undergo minor modifications for cause as specified in 40 CFR 144.41. The filing of a request for a permit modification, revocation and reissuance, or termination, or the notification of planned changes, or anticipated noncompliance on the part of the permittee does not stay the applicability or enforceability of any permit condition.

2. Transfer of Permits

This permit is not transferable to any person except after notice to the Director on APPLICATION TO TRANSFER PERMIT (EPA Form 7520-7) and in accordance with 40 CFR 144.38. The Director may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the SDWA.

C. SEVERABILITY

The provisions of this permit are severable, and if any provision of this permit or the application of any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

D. CONFIDENTIALITY

In accordance with 40 CFR Part 2, any information submitted to EPA pursuant to this permit may be claimed as confidential by the submitter. Any such claim must be asserted at the time of submission in the manner prescribed in 40 CFR 2.203 and on the application form or instructions, or, in the case of other submissions, by stamping the words "confidential" or "confidential business information" on each page containing such information. If no claim is made at the time of submission, EPA may make the information available to the public without further notice. If a claim is asserted, the information will be treated in accordance with the procedures in 40 CFR Part 2 (Public Information).

Claims of confidentiality for the following information will be denied:

1. The name and address of the permittee.
2. Information which deals with the existence, absence, or level of contaminants in drinking water.

E. GENERAL DUTIES AND REQUIREMENTS

1. Duty to Comply

The permittee shall comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the SDWA and is grounds for enforcement action, permit termination, revocation and reissuance, modification, or for denial of a permit renewal application.

2. Penalties for Violations of Permit Conditions

Any person who violates a permit condition is subject to a civil penalty not to exceed \$25,000 per day of such violation. Any person who willfully or negligently violates permit conditions is subject to a fine of not more than \$25,000 per day of violation and/or being imprisoned for not more than three (3) years.

3. Duty to Reapply

a. If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must submit a complete application for a new permit at least 180 days before this permit expires.

b. The conditions of an expired permit continue in force under 5 U.S.C. 558(c) until the effective date of a new permit if:

(1) The permittee has submitted a timely application which is a complete application for a new permit; and

(2) The Director, through no fault of the permittee, does not issue a new permit with an effective date on or before the expiration date of the previous permit (for example, when issuance is impracticable due to time or resource con-

straints).

(3) Permits continued under 5 U.S.C. 558(c) remain fully effective and enforceable.

4. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

5. Duty to Mitigate

The permittee shall take all reasonable steps to minimize or correct any adverse impact on the environment resulting from noncompliance with this permit.

6. Proper Operation and Maintenance

The permittee shall, at all times, properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of this permit.

7. Duty to Provide Information

The permittee shall provide to the Director, within a reasonable time, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also provide to the Director, upon request, copies of records required to be kept by this permit.

8. Inspection and Entry

The permittee shall allow the Director, or an authorized representative, upon the presentation of credentials and other documents as may be required by law to:

a. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this permit;

b. Have access to and copy, at reasonable times, any records that are kept under the conditions of this permit;

c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

d. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by SDWA, any contaminants or parameters

at any location.

9. Records

a. The permittee shall retain records and all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit and records of all data used to complete this permit application for a period of at least three years from the date of the sample, measurement, report or application. These periods may be extended by request of the Director at any time.

b. The permittee shall retain records concerning the nature and composition of all injected fluids until three years after the completion of plugging and abandonment in accordance with the PLUGGING AND ABANDONMENT PLAN (ATTACHMENT Q). At the conclusion of the retention period, if the Director so requests, the permittee shall deliver the records to the Director. The permittee shall continue to retain the records after the three year retention period unless he delivers the records to the Director or obtains written approval from the Director to discard the records.

c. Records of monitoring information shall include:

- (1) The date, exact place, and time of sampling or measurements;
- (2) The name(s) of the individual(s) who performed the sampling or measurements;
- (3) The date(s) analyses were performed;
- (4) The name(s) of the individual(s) who performed the analyses;
- (5) The analytical techniques or methods used; and
- (6) The results of such analyses.

d. Monitoring of the nature of injected fluids shall comply with applicable analytical methods cited and described in Table I of 40 CFR 136.3 or in appendix III of 40 CFR Part 261 or in certain circumstances by other methods that have been approved by the Administrator.

e. All environmental measurements required by the permit, including, but not limited to measurements of pressure, temperature, mechanical integrity, and chemical analyses shall be done in accordance with EPA's Quality Assurance Program Plan.

f. As part of the COMPLETION REPORT, the operator must submit a PLAN that describes the procedures to be carried out to obtain detailed chemical and physical analysis of representative samples of the waste including the quality assurance procedures used including the following:

- (1) The parameters for which the waste will be analyzed and the rationale for the selection of these parameters;
- (2) The test methods that will be used to test for these parameters; and
- (3) The sampling method that will be used to obtain a representative sample of the waste to be analyzed.

g. The permittee shall complete a written manifest for each load of waste received. The manifest shall contain a description of the nature and composition of all injected fluids, date of receipt, source of material received for disposal, name and address of the waste generator, a description of the monitoring performed and the results, a statement stating if the waste is exempt from regulation as hazardous waste as defined by 40 CFR 261.4, and any information on extraordinary occurrences.

h. Dates of most recent calibration or maintenance of gauges and meters used for monitoring required by this permit shall be noted on the gauge or meter.

10. Reporting Requirements

The permittee shall give notice to the Director, as soon as possible, of any planned physical alterations or additions to the permitted facility or changes in type of injected fluid.

11. Anticipated Noncompliance

The permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

12. Twenty-Four Hour Reporting

a. The permittee shall report to the Director any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours (phone number: 206-553-6697) from the time the permittee becomes aware of the circumstances. The following shall be included as information which must be reported orally within 24 hours:

(1) Any monitoring or other information which indicates that any contaminant may cause an endangerment to an underground source of drinking water.

(2) Any noncompliance with a permit condition or malfunction of the injection system.

b. A written submission shall also be provided within five (5) days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause, the period of noncompliance, including exact date and times, and, if the noncompliance has not been corrected, the anticipated time it is expected to continue, and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance.

13. Other Noncompliance

The permittee shall report all other instances of noncompliance not otherwise reported at the time monitoring reports are submitted. The reports shall contain the information listed in Permit Condition E-12.b.

14. Reporting Corrections

When the permittee becomes aware that he failed to submit any relevant facts in the permit application or submitted incorrect information in a permit application or in any report to the Director, the permittee shall promptly submit such facts or information.

15. Signatory Requirements

a. All permit applications, reports required by this permit and other information requested by the Director shall be signed by a principal executive officer of at least the level of vice-president, or by a duly authorized representative of that person. A person is a duly authorized representative only if:

(1) The authorization is made in writing by a principal executive of at least the level of vice-president.

(2) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field, superintendent, or position of equivalent responsibility. A duly authorized representative may thus be either a named individual or any individual occupying a named position.

(3) The written authorization is submitted to the Director.

b. If an authorization under paragraph a. of this section is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of paragraph a. of this section must be submitted to the Director prior to or together with any reports, information or applications to be signed by an authorized representative.

c. Any person signing a document under paragraph a. of this section shall make the following certification:

"I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

F. PLUGGING AND ABANDONMENT

1. Notice of Plugging and Abandonment

The permittee shall notify the Director no later than 45 days before conversion or abandonment of the wells.

2. Plugging and Abandonment Report

The permittee shall plug and abandon the wells as provided in the PLUGGING AND ABANDONMENT PLAN (ATTACHMENT Q), which is hereby incorporated as a part of this permit. Within 60 days after plugging any well the permittee shall submit a report to the Director in accordance with 40 CFR 144.51(o) and include a certificate of closure in accordance with 40 CFR 144.14(c)(9). EPA reserves the right to change the manner in which the well will be plugged if the well is not proven to be consistent with EPA requirements for construction and mechanical integrity. The Director may ask the permittee to update the estimated plugging cost periodically.

3. Cessation Limitation

After a cessation of operations of two years, the permittee shall plug and abandon the each well in accordance with the plan unless he:

a. Provides notice to the Director;

b. Demonstrates that the well will be used in the future; or

c. Describes actions or procedures, satisfactory to the Director, that the permittee will take to ensure that the well will not endanger underground sources of drinking water during the period of temporary abandonment. These actions and procedures shall include compliance with the technical requirements applicable to active injection wells unless waived by the Director.

4. Cost Estimate for Plugging and Abandonment

a. The permittee estimates the 1994 cost of plugging and abandonment of the permitted wells as \$267,000.

b. The permittee must submit financial assurance and a revised estimate within in April of each year. The estimate shall be made in accord with 40 CFR 144.62.

c. The permittee must keep at the facility during the operating life of the facility the latest plugging and abandonment cost estimate.

d. When the cost estimate changes, the documentation submitted under 40 CFR 144.63(f) shall be amended as well to ensure that appropriate financial assurance for plugging and abandonment is maintained continuously.

e. The permittee must notify the Director by registered mail of the commencement of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code, naming the owner or operator as debtor, within 10 business days after the commencement of the proceeding.

G. FINANCIAL RESPONSIBILITY

The permittee shall maintain continuous compliance with the requirement to maintain financial responsibility and resources to close, plug, and abandon the underground injection wells. If the financial test and corporate guarantee provided under 40 CFR 144.63(f) should change, the permittee shall immediately notify the Director. The permittee shall not substitute an alternative demonstration of financial responsibility for that which the Director has approved, unless it has previously submitted evidence of that alternative demonstration to the Director and the Director notifies him that the alternative demonstration of financial responsibility is acceptable.

PART II
WELL SPECIFIC CONDITIONS

A. CONSTRUCTION

1. Casing and Cementing

The permittee shall case and cement the wells to prevent the movement of fluids into or between underground sources of drinking water. Casing and cement shall be installed in accordance with Attachment L/M.

2. Tubing and Packer Specifications

The wells shall inject fluids through tubing with a packer. Tubing and packer shall be installed in accordance with Attachment L/M.

3. New Wells in the Area of Review

New wells within the area of review shall be constructed in accordance with the Alaska Oil and Gas Conservation Commission Regulations Title 20 - Chapter 25.

B. CORRECTIVE ACTION

No wells in the area of review require corrective action.

C. WELL OPERATION

1. Prior to Commencing Injection

Injection operations pursuant to this permit may not commence until:

a. Construction is complete and the permittee has submitted two copies of COMPLETION FORM FOR INJECTION WELLS (EPA Form 7520-9), see APPENDIX; and

(1) The Director has inspected or otherwise reviewed the new injection well and finds it is in compliance with the conditions of the permit; or

(2) The permittee has not received notice from the Director of intent to inspect or otherwise review the new injection well within thirteen (13) days of receiving the COMPLETION REPORT in which case prior inspection or review is waived and the permittee may commence injection.

b. The operator demonstrates that the well has mechanical integrity as described below and the permittee has received notice from the Director that such a demonstration is satisfactory. The permittee shall notify EPA two weeks prior to conducting this initial test so that an EPA representative may be present.

(1) In order to demonstrate there is no significant leak in the casing, tubing or packer, the tubing/casing annulus must be pressure tested to at least 1,500 pounds per square inch gauge (psig) for thirty minutes. Pressure loss may not decline more than 10 percent in the thirty minutes.

(2) In order to demonstrate that the confining zone is not fractured and there is no significant fluid movement through vertical channels adjacent to the injection well bore, a radioactive tracer survey, temperature log or noise log shall be conducted under at least 1,500 pounds per square inch

gauge (psig) of pressure. A copy of the log shall be accompanied by a descriptive and interpretive report.

2. Mechanical Integrity

a. Standards

The injection wells must have and maintain mechanical integrity pursuant to 40 CFR 146.8.

b. Prohibition Without Demonstration of Mechanical Integrity

Injection operations are prohibited after the effective date of this permit unless the permittee has conducted the following tests and submitted the results to the Director:

(1) To detect leaks in the casing, tubing, or packer, the casing-tubing annulus must be pressure tested to at least 1,500 psig for thirty minutes. Pressure loss may not decline more than 10 percent in thirty minutes. This pressure test is required at a time interval of no more than 12 months between tests.

(2) To detect movement of fluids in vertical channels adjacent to the well bore and to determine that the confining zone is not fractured, a radioactive tracer survey, temperature log or noise log shall be conducted at an injection pressure of at least 1,500 psig. A copy of the log shall be accompanied by a descriptive and interpretive report. This fluid movement test is required at a time interval of no more than five (5) years between tests. Fluid movement tests conducted May 24, 1989, May 18, 1990, and May 2, 1991, were accepted by EPA. The next test shall be completed not later than May 2, 1996.

c. Terms and Reporting

(1) Mechanical integrity tests identified in 2.b shall be submitted within 45 days of the effective date of this permit. A copy of the log and a descriptive and interpretive report shall be submitted within 45 days of completion of the logging.

(2) Mechanical integrity shall also be demonstrated by the pressure test in 2.b.(1) any time the tubing is removed from the well or if a loss of mechanical integrity becomes evident during operation. The permittee shall report the results of such tests within 45 days of completion of the tests.

(3) After the initial mechanical integrity demonstration, the permittee shall notify the Director of intent to demonstrate mechanical integrity at least 30 days prior to subsequent demonstrations. EPA accepted the June 9, 1989, submittal as the initial mechanical integrity demonstration conducted May 24, 1989.

(4) The Director will notify the permittee of the acceptability of the mechanical integrity demonstration within 13 days of receipt of the results of the mechanical integrity tests. Injection operations may continue during this 13 day review period. If the Director does not respond within 13 days, injection may continue.

(5) In the event that the well fails to demonstrate mechanical integrity during a test or a loss of mechanical integrity occurs during operation, the permittee shall halt operation immediately and shall not resume operation until the Direc-

tor gives approval to resume injection.

(6) The Director may, by written notice, require the permittee to demonstrate mechanical integrity at any time.

3. Injection Zone

Injection shall be limited to the Sagavanirktok Formation.

4. Injection Pressure Limitation

Injection pressures shall not initiate new fractures or propagate existing fractures in the confining zone, nor shall the maximum injection pressure, measured at the wellhead, exceed 1400 pounds per square inch (psig).

5. Annulus Pressure

The annulus between the tubing and the long string casing shall be filled with a corrosion inhibited non freezing solution. A positive surface pressure up to 150 psig is authorized.

6. Injection Rate Limitation

The rate of waste injection shall be limited to a maximum of 285,720 barrels per month based on a 30 day month.

7. Injection Fluid Limitation

No substance other than those non-hazardous wastes noted in the permit application shall be injected. In the event that third party wastes are accepted the third party must certify that hazardous waste or radioactive substances are not injected.

NOTE: Neither hazardous waste as defined in 40 CFR 261 nor radioactive substances shall be injected for disposal.

D. MONITORING

1. Monitoring Requirements

Samples and measurements collected for the purpose of monitoring shall be representative of the monitored activity.

2. Continuous Monitoring Devices

Continuous monitoring devices shall be installed, maintained, and used to monitor injection pressure and the pressure on the annulus between the tubing and the long string casing. Calculated flow rates and calculated volumes are acceptable.

3. Alarms and Operational Modifications

a. The permittee shall install, continuously operate, and maintain alarms to detect excess injection pressures and excess annular pressures.

b. A pressure relief valve must be installed to ensure that fluids are not injected at pressures higher than Part II.C.4.

c. The permittee shall manually shut-in the well if the pressure on the annulus exceeds a pressure of 150 psig.

d. Plans and specifications for the alarms and pressure relief valve shall be submitted to the Director as part of the COMPLETION REPORT (Part II.C.1.a.).

E. REPORTING REQUIREMENTS

1. Quarterly Reports

The permittee shall submit quarterly reports on INJECTION WELL MONITORING REPORT (EPA Form 7520-8) to the Director containing the following information:

a. Monthly average, maximum and minimum values for injection pressure, flow rate, volume, and annular pressure.

b. Physical, chemical, and other relevant characteristics of the injected fluid.

c. Any well work over.

d. Mechanical integrity tests in appropriate quarter.

e. Any other tests required by the Director.

2. Report Certification

All reporting and notification required by this permit shall be signed and certified in accordance with Part I.E.15., and submitted to the following address:

Chief, Underground Injection Control and Program Support Section
U.S. Environmental Protection Agency (WD-133)
1200 Sixth Avenue
Seattle, Washington 98101

ATTACHMENT Q
PLUGGING AND ABANDONMENT PLAN

ATTACHMENT L/M
CONSTRUCTION SCHEMATIC

APPENDIX
REPORTING FORMS

Enclosed are EPA Forms:

7520-7	APPLICATION TO TRANSFER PERMIT
7520-8	INJECTION WELL MONITORING REPORT
7520-9	COMPLETION FORM FOR INJECTION WELLS